

Claims:

1. A method of identifying a function of a gene sequence of interest in a cell type comprising
  - a) over expressing all or part of said sequence in a first population of said cell type;
  - b) inhibiting expression of said sequence in a second population of said cell type;
  - c) detecting changes in one or more cellular factors in said first and second populations;
  - d) identifying a function of said gene sequence of interest based on the identity of, or effect on, said one or more cellular factors.
2. The method of claim 1 wherein said changes are increases and/or decreases in the expression of said cellular factors.
3. The method of claim 1 wherein said changes are in the post-translational modifications of said cellular factors.
4. The method of claim 3 wherein said changes are in the phosphorylation or glycosylation of said cellular factors.
5. The method of claim 1 wherein said changes are in the activity of said cellular factors.
6. The method of claim 1 wherein said over expressing in a first population is by use of a pseudotyped lentiviral vector.
7. The method of claim 1 wherein said inhibiting expression in a second population is by use of a pseudotyped lentiviral vector capable of expressing all or part of said gene sequence in an antisense orientation.

8. The method of claim 1 wherein said inhibiting expression in a second population is by use of a pseudotyped lentiviral vector capable of expressing one or more ribozymes against said gene sequence.

9. The method of claim 1 wherein said inhibiting expression in a second population is by the generation of post-transcriptional gene silencing (PTGS) against said gene sequence.

10. The method of claim 1 wherein said cell type is a primary cell.

11. The method of claim 1 wherein said cell type is a cultured cell line.

12. The method of claim 1 wherein said gene sequence of interest was previously identified as expressed in cells of said cell type.

13. The method of claim 1 wherein said gene sequence of interest was not previously identified as expressed in cells of said cell type.

14. The method of claim 1 wherein said gene sequence of interest encodes a product which modulates expression of said one or more cellular factors by binding to nucleic acids encoding, or regulating the expression of, said one or more cellular factors.

15. The method of claim 12 wherein said gene sequence of interest encodes a transcriptional activator.

16. The method of claim 12 wherein said gene sequence of interest encodes a transcriptional repressor.

17. The method of claim 1 wherein said gene sequence of interest is a human sequence.

18. The method of claim 1 wherein said cell type is a human cell type.
19. A method of altering the expression of one or more cellular factors in a cell comprising over expressing or inhibiting the expression of a gene sequence for which a function was identified by the method of claim 1.
20. A method of altering the phenotype of a cell comprising over expressing or inhibiting the expression of a gene sequence for which a function was identified by the method of claim 1.
21. A method of identifying a function of a gene sequence of interest in a cell heterologous to the cellular source of said sequence comprising
- a) over expressing all or part of said sequence in a first population of said cell type;
  - b) inhibiting expression of said sequence in a second population of said cell type;
  - c) detecting changes in one or more cellular factors in said first and second populations;
  - d) identifying said function of said gene sequence of interest based on the identity of, or effect on, said one or more cellular factors.